

IN THE CLAIMS:

Please cancel claims 4-5, 11-12, 15, 17-20 and 27-38 without prejudice, and amend the claims as follows:

1. (Currently Amended) A method of optimizing and processing a query in a database management system in order to retrieve data from computer storage, the method comprising:

receiving a query;

preparing a first execution plan for the query;

calculating a cost for the first execution plan, wherein the cost is represented as a first vector quantity comprising at least two dimensions, wherein the at least two dimensions comprise at least one of a magnitude, a variance range, a confidence, a penalty and a combination thereof; wherein the magnitude is a value having a highest probability to be within the variance range, wherein the variance range is a range in which the confidence applies, wherein the confidence is a probability that a real value is within the variance range, and wherein the penalty is a maximum delta from the magnitude; and

determining whether the first execution plan should be selected for execution based on the first vector quantity.

2. (Cancel)

3. (Original) The method of claim 1, wherein determining whether the first execution plan should be selected for execution comprises comparing two or more of the at least two dimensions.

4. (Cancel)

5. (Cancel)

6. (Original) The method of claim 1, wherein calculating the cost comprises utilizing at least a second vector quantity comprising at least two dimensions.
7. (Currently Amended) The method of claim ~~[[5]]~~6, wherein the at least two dimensions of the first vector quantity and the second vector quantity comprise at least one of a magnitude, a variance range, a confidence and a penalty.
8. (Original) The method of claim 1, wherein if the first execution plan is not selected for execution, further comprising:
preparing a second execution plan;
calculating a cost for the second execution plan; wherein the cost for the second execution plan is represented as a second vector quantity comprising at least two dimensions; and
selecting one of the execution plans based on the first and second vector quantities.
9. (Currently Amended) The method of claim ~~[[7]]~~8, further comprising determining whether a selected execution plan meets acceptance criteria based on the vector quantity of the selected execution plan, wherein if the selected execution plan meets the acceptance criteria the selected execution plan is executed.
10. (Currently Amended) ~~The method of claim 7,~~ A method of optimizing and processing a query in a database management system in order to retrieve data from computer storage, the method comprising:
receiving a query;
preparing a first execution plan for the query;
calculating a cost for the first execution plan, wherein the cost is represented as a first vector quantity comprising at least two dimensions;
preparing a second execution plan;
calculating a cost for the second execution plan; wherein the cost for the second execution plan is represented as a second vector quantity comprising at least two

dimensions, wherein one of the at least two dimensions of the first and second vector quantities comprises a confidence value;

selecting one of the execution plans based on the first and second vector quantities; and

and further comprising determining whether a higher confidence value is desired for a selected execution plan and, if so, pursuing a strategy to increase the confidence value.

11. (Cancel)

12. (Cancel)

13. (Currently Amended) A method of optimizing and processing a query in a database management system in order to retrieve data from computer storage, the method comprising:

receiving a query;

calculating a first vector quantity of X dimensions, wherein X is an integer greater than 1;

calculating a second vector quantity of Y dimensions, wherein Y is an integer greater than 1; and

calculating a cost for a first execution plan using the first vector quantity and the second vector quantity; wherein the cost is represented as a third vector quantity comprising N dimensions, wherein N is an integer greater than 1; and

determining whether the first execution plan should be selected for execution based on the third vector quantity; wherein the X dimensions, Y dimensions and N dimensions comprise at least one of a magnitude, a variance range, a confidence and a penalty; wherein the magnitude is a value having a highest probability to be within the variance range, wherein the variance range is a range in which the confidence applies, wherein the confidence is a probability that a real value is within the variance range, and wherein the penalty is a maximum delta from the magnitude.

14. (Previously Presented) The method of claim 13, wherein at least one of the first vector quantity and the second vector quantity is selectivity.

15. (Cancel)

16. (Currently Amended) The method of claim ~~[[14]]~~13, wherein determining whether the first execution plan should be selected for execution comprises comparing each of the ~~other~~ N dimensions.

17. (Cancel)

18. (Cancel)

19. (Cancel)

20. (Cancel)

21. (Currently Amended) ~~The method of claim 19.~~ A method of optimizing and processing a query in a database management system in order to retrieve data from computer storage, the method comprising:

receiving a query;

calculating a first vector quantity of X dimensions, wherein X is an integer greater than 1;

calculating a second vector quantity of Y dimensions, wherein Y is an integer greater than 1; and

calculating a cost for a first execution plan using the first vector quantity and the second vector quantity; wherein the X dimensions, Y dimensions, N dimensions and M dimensions comprise at least one of a magnitude, a variance range, a confidence and a penalty; wherein the magnitude is a value having a highest probability to be within the variance range, wherein the variance range is a range in which the confidence applies,

wherein the confidence is a probability that a real value is within the variance range, and wherein the penalty is a maximum delta from the magnitude; and

determining whether the first execution plan should be selected for execution based on the third vector quantity; wherein if the first execution plan is not selected for execution, further comprising:

preparing a second execution plan;

calculating a cost for the second execution plan; wherein the second execution plan is represented as a fourth vector quantity comprising M dimensions, wherein M is an integer greater than 1; and

selecting one of the execution plans based on the third and fourth vector quantities.

22. (Original) A method of optimizing and processing a query in a database management system in order to retrieve data from computer storage, the method comprising:

receiving a query;

preparing a first execution plan for the query;

calculating a cost for the first execution plan, wherein the cost is represented as a first vector quantity comprising at least two dimensions, wherein at least one dimension is selected from a magnitude, a variance range, a confidence and a penalty; wherein the magnitude is a value having the highest probability to be within the variance range, wherein the variance range is a range in which the confidence applies, wherein the confidence is a probability that a real value is within the variance range, and wherein the penalty is a maximum delta from the magnitude; and

determining whether the first execution plan should be selected for execution based on the first vector quantity.

23. (Previously Presented) The method of claim 22, wherein determining whether the first execution plan should be selected for execution comprises comparing at least two of the at least two dimensions.

24. (Previously Presented) The method of claim 22, wherein if the first execution plan is not selected for execution, further comprising:

preparing a second execution plan;

calculating a cost for the second execution plan, wherein the cost for the second execution plan is represented as a second vector quantity; and

selecting one of the first and second execution plans based on the first and second vector quantities.

25. (Currently Amended) The method of claim ~~[[23]]~~24, further comprising determining whether a selected execution plan meets predetermined acceptance criteria based on the vector quantity of the selected execution plan, wherein if the selected execution plan meets the predetermined acceptance criteria the selected execution plan is executed.

26. (Currently Amended) The method of claim ~~[[23]]~~24, further comprising determining whether more confidence is desired for a selected execution plan.

27-38. (Canceled)